Science and Technology Policy in Latin America - Nourishing the Research Environment

Speech by Maureen O'Neil
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The Americas and Canada have a relationship — one that, I'm happy to say, is getting stronger. We in Canada have long delighted in the cultural riches and intellectual energy of Latin America. And with the liberalization of trade in the Americas, our economic linkages have been steadily growing.

Today, our relationship is best characterized by its economic, political, social and cultural dimensions. But I want to talk to you now about the exciting opportunities that

exist for close collaboration on science and technology issues, and how this kind of collaboration fits with the mandate of the IAI.

Almost 30 years ago, at its inception, IDRC began working with researchers, scientists, and academics in Latin America. We have supported research by Latin American scientists and researchers on a wide variety of topics — both on their own, and in collaboration with Canadian partners from universities and colleges, public sector research institutes, and non-governmental organizations.

From the very beginning, IDRC focussed not only on scientific research, but also on measures to improve policies

for science and technology. It established a science and technology policy research unit — in part responding to the line of research that was coming out of Latin America — and a global network of science and technology policy researchers, anchored in Latin America by Francisco Sagasti. (Dr. Sagasti is today, I might add, a member of IDRC's Board of Governors.)

Notre engagement à la recherche sur les politiques de la science et de la technologie témoigne du fait que les grands esprits — les penseurs novateurs — exigent une structure politique et une société civile accueillantes; des sociétés qui favorisent une pensée critique et ouverte afin que leurs

citoyens apportent une contribution maximale au développement humain.

That supportive political structure has not always existed in Latin America. In some countries, including Chile and Argentina during the period of the dictatorships, IDRC supported the work of many fine scientists. Today, some tell us that, had they not received our support during those dark times, they would have been forced to flee their countries. Innovative forms of institutional and program support enabled them to remain at home and provide help and hope.

The point I want to make is that what IDRC experienced in Latin America was a remarkable capacity for research and

for thinking about the big, the important, issues in development.

Now that new, more democratic governments are in place in Latin America, the time is ripe for strengthening collaborative efforts in science and technology research. A number of governments are expressing a growing commitment to supporting scientific innovations.

Just as in Canada, periods of fiscal restraint resulted in falling levels of research funding throughout Latin America. But there are now signs of a reversal of this trend. At least as important as trends in funding are initiatives to reform existing science and technology institutions and policies, to

make them more effective and relevant to the problems confronting the nations of the hemisphere.

Le processus de réforme s'est accompagné d'un intérêt accru pour une recherche coopérative franchissant les frontières nationales. Ce n'est pas un hasard si, au cours des deux dernières années, des délégations venues d'Amérique latine (d'Argentine, du Mexique, du Chili, du Brésil) se sont succédé au Canada en manifestant un réel intérêt pour une collaboration étroite sur les questions de la science et de la technologie.

We are keen to be a part of that effort because we believe that knowledge needs to be shared. The research challenges

facing Canada go beyond our own capacity to respond, and necessitate collaboration internationally. While we have typically looked to Europe, the United States and to some degree Asia as partners in research and science, there is also considerable potential for the same in the Americas.

Au CRDI, nous supportons la recherche qui encourage des solutions adaptées aux problèmes locaux en mettant en oeuvre des stratégies et des technologies locales. Permettez-moi de vous donner un exemple récent d'une collaboration extrêmement porteuse qui s'est inspirée de ce même principe.

Thirteen years ago, a gold miner visited Brazilian

cardiologist Fernando Branches complaining of heart problems. But Dr. Branches couldn't find anything wrong with his heart. He did know, however, that the miner was one of an estimated one million Brazilians who pan for gold in the Amazon. He also knew that mercury is used to extract the ore from river sediments.

Dr. Branches suspected, quite rightly as it turned out, that this man was suffering from mercury poisoning.

Dr. Branches' efforts to track the health effects of mercury contamination in the Amazon became the basis of a full-fledged, highly collaborative study — a study that has become world renowned.

Researchers from Brazil's Universidade Federal do Pará and Universidade Federal do Rio de Janeiro joined forces with researchers from the Université du Québec à Montréal. In 1993, with the support of IDRC, they began to study the consequences of mining along the Tapajos River, a tributary of the Amazon.

The team they assembled included bio-geochemists, nurses, community health workers, a cytonogeneticist, soil scientists, environmental health experts, a neuro-physiologist, a fish scientist and, of course, Dr. Branches.

Researchers worked in close collaboration with community leaders, local health care workers, fisherfolk, and school

teachers. Villagers willingly gave hair and blood samples and provided important insights on the local ecosystem.

What the researchers discovered was startling: Widespread mercury contamination is, indeed a fact of life. Mercury was present in every river sediment, in every fish caught, and in people living beside the river. Although 97% of the villagers had mercury concentrations that fell well under the World Health Organizations threshold, this study was the first to show the debilitating effects of low-level exposure so clearly.

It also revealed that massive deforestation — which has stripped the riverbanks of their trees — is causing erosion

which is washing mercury-laden soil into the river.

Aujourd'hui, dans la deuxième phase du projet, le personnel travaille main dans la main avec les intervenants locaux pour les aider à réduire la présence du mercure en opérant un changement de régime alimentaire, ainsi que sur le plan des pratiques de pêche et de culture agricole et celui de la reforestation.

In addition to this, IDRC is supporting an international, multi-stakeholder research network which is focussing on mercury in the Amazonian eco-system. Almost 200 researchers are exchanging information and examining how to coordinate their research on eco-system approaches to

human health.

Mercury poisoning, of course, is not unique to Brazil. Some of you may remember the news coverage during the 1970s of mercury poisoning among native people in northwestern Ontario.

In fact, Canada and the Americas share many environmental problems — including many that you at the Inter-American Institute for Global Change Research work on; the loss of bio-diversity, for example, as well as climate change and its impact. We also share the need to work towards solutions for these problems — solutions which include conservation and sustainable development.

The work that you do is essential to this process. Your institute has contributed much to raising consciousness about the role people play as agents of global change, and the responsibility we all bear as stewards of this planet.

We share much. You, too, are committed to the principles of scientific excellence, international cooperation, and the free and open exchange of information. And science and technology partnering represents a vital building block in a powerful Canada-Americas relationship.

I mentioned earlier that the time is ripe for strengthening collaborative efforts in Latin America because more governments are open to it. But there's more to it than that.

Many Latin American countries are now recognizing that economic development is intimately tied to technological development and technological change. That to be competitive requires an investment in science and technology.

En outre, certains gouvernements se rendent de plus en plus compte de la nécessité de l'équité sociale et de la pérennité environnementale. Mais ni l'une ni l'autre ne sont possibles isolément et les deux exigent une volonté politique et une action concertée.

Bien sûr, les moyens financiers sont comptés. Mais il faut préciser un aspect positif, que le climat n'a jamais été aussi

propice à des partenariats et à une collaboration porteurs. Or, nous savons que la collaboration dans le domaine de la science et de la technologie peut s'épanouir — non seulement en raison des collaborations réussies du passé mais également à cause des succès enregistrés aujourd'hui.

I'd like to elaborate on a few of them:

IDRC's *Environmental Management Secretariat* works with Latin American cities to support their research. Cities define what they need, and together we share the cost of support for research. By agreement, whatever information is gathered will be made public.

This Secretariat provides cities with opportunities to enter into partnerships to tackle complex environmental concerns. For example, three municipalities in Porto Alegre, Brazil, were each experiencing water pollution and water shortages. So they joined with IDRC to research how to deal with the situation.

As a result of the research, they devised a joint management program. Now they are in the process of building a new institution, coordinated by the municipalities, to manage their watershed.

Then there's the *International Model Forest Network Secretariat*. At the 1992 United Nations Conference on

Environment and Development, Canada's Prime Minister announced a $10 million international program for establishing Model Forests, primarily in Mexico and Russia.

Given your work on global climate change, you know, of course, that deforestation is a serious and growing issue. But mention the words "Model Forest" and people often imagine a pristine, "hands-off" forest — something that is totally unrealistic in this day and age. The reality is that Model Forests are about people, how they use and interact with the forest ecosystem and the many resources linked to it — soil, water, and wildlife.

Une forêt modèle est un partenariat — un processus — par lequel la collectivité décide de l'utilisation de la forêt et de l'aménagement des ressources forestières afin de satisfaire ses besoins de la meilleure façon. Le Secrétariat de forêts modèles est là pour nouer des liens parmi les praticiens de la forêt et les organismes internationaux intéressés en amorçant les discussions en matière de politiques à l'échelon mondial.

Latin America has four Model Forests: One in Chile, and three in Mexico. And Argentina is in the advanced stages of developing model forests in the Futaleufu and Formosa provinces.

The Monarch Butterfly Model Forest in the Mexico and Michoacan States of Mexico not only provides refuge to millions of monarch butterflies, but has attracted tourists to the 22 municipalities that lie within it. The end result? The forest and its resources are sustainably managed by community committees (that include industries, environmental groups, community associations, indigenous peoples, landowners, and governments), the monarch butterfly is protected, *and* additional income is generated for local people.

La création de la forêt modèle Monarch Butterfly a constitué un pas en avant décisif pour l'expansion du réseau mexicain de forêts modèles et l'établissement d'une stratégie

nationale visant à mettre en oeuvre des politiques de gestion durable au niveau local.

Finally, I would like to return to the point I began with — the need for a supportive policy environment for research and science — and mention a recent example of collaboration between IDRC and the Chilean government. I think this is a good example of the kind of collaboration that's needed — and that works.

In August 1997, a conversation between Prime Minister Chrétien and Chilean President Eduardo Frei raised the possibility of collaborating on a review of Chile's science and technology policies. This discussion was prompted by

Chilean concerns about the limits of their resource-based industrialization model. The following year, an agreement was reached for a project to be jointly funded by IDRC and the Chilean Science and Technology Council — known as Conicyt — and to be managed by IDRC.

In consultation with Conicyt, an international team was selected, and a fact-finding mission took place last August. The mission report has been completed in Spanish and English and has been widely shared with Chilean stakeholders. This then set the stage for a return visit by the review team to present their findings and discuss them with the Chileans. The report presents an overall diagnostic of science and technology policy in Chile and advances eight

suggestions for future action.

Of course, one study doesn't necessarily produce policy change — in this area any less than in others. But there is already evidence that things are being done differently as a result of this collaboration. As well, we see prospect for on-going collaboration between Canada and Chile on issues of human resource development for science and technology, fiscal incentives for R&D, technical extension services for SMEs, and reform of public sector research labs.

Most importantly is the recognition by Chilean authorities that fostering research and innovation is critical to the future of their country. Over time, this could result in

exciting opportunities for collaboration between Latin American countries and Canada.

These examples serve to give you a taste of what's possible when countries committed to a better future — a sustainable future — work together. We at IDRC recognize the significant benefits to be gained for Canada and Latin America by joining forces in research on global change.